

LIQUID EFFLUENT

Results for 2002

This program monitors discharges of liquid waste effluents from DOE facilities and operations at the INEEL Site and Idaho Falls facilities. The program covers both radioactive and nonradioactive parameters in effluent, and addresses permit requirements in State of Idaho Wastewater Land Application Permits (WLAPs), City of Idaho Falls Industrial Wastewater Acceptance Form (IWAF), and DOE environmental protection objectives. Land application methods at the INEEL include sprinkler systems, infiltration trenches, and percolation ponds.

In addition to monitoring per the WLAP and IWAF permits, the Liquid Effluent Program samples for additional parameters, and at other locations, in addition to those required by the permits. These sampling locations were chosen using a risk-based approach and differentiates between streams requiring "characterization" monitoring and those requiring "surveillance" monitoring. The objectives of characterization monitoring are to provide data from which risk can be quantified and to establish baseline conditions for measuring change. Streams requiring characterization monitoring did not have sufficient historical data to quantify risk. Locations requiring surveillance monitoring were determined from historical data to have a potential risk of exceeding a limit or a potential impact to the environment.

During 2002, 10 effluent discharge points were routinely monitored for nonradiological parameters and 5 for radiological parameters at the following five INEEL Site areas: Central Facilities Area, Idaho Falls Facilities, Idaho Nuclear Technology and Engineering Center, Test Area North, and Test Reactor Area. Information regarding permit limits and location-specific parameters can be found in the *2002 Annual Site Environmental Report* or the *2002 Wastewater Land Application Site Performance Reports for the INEEL* on our Web site.

RESULTS SUMMARY

Central Facilities Area (CFA) Sewage Treatment Plant

- Sewage Treatment Plant Lift Station (CFA-LS1):
 - Liquid Effluent Description: Untreated wastewater from all sanitary sewer drains throughout CFA
 - Type of Monitoring: Wastewater Land Application Permit
 - 2002 Results: Concentrations of all parameters below applicable limits.
- Sewage Treatment Plant Effluent Pump Pit (CFA-STF):
 - Liquid Effluent Description: Treated wastewater from the CFA Sewage Treatment Plant lagoons prior to land application
 - Types of Monitoring: Wastewater Land Application Permit and characterization
 - 2002 Results: Concentrations of all parameters below applicable limits.
- Transportation Complex Oil and Water Separator (CFA-696):
 - Liquid Effluent Description: Water from floor drains and vehicle maintenance areas in the Transportation Complex
 - Type of Monitoring: Surveillance
 - 2002 Results: Concentrations of all parameters within expected levels.

Idaho Falls Facilities

- INEEL Research Center East Access Port (IFF-603B):
 - Liquid Effluent Description: Sewage and laboratory discharges from INEEL Research Center and the Research Office Building
 - Type of Monitoring: Industrial Wastewater Acceptance Form
 - 2002 Results: Concentrations of all parameters within permit limits.

QUICK FACTS

- 10 effluent discharge points
- 5 INEEL site areas
- 380 effluent samples collected
- Regulations:
 - State of Idaho Wastewater Land Application Permit (WLAP)
 - City of Idaho Falls Industrial Wastewater Acceptance Form (IWAF)
 - DOE environmental protection objectives

FOR MORE INFORMATION

Visit our Web site at:

<http://cleanup.inel.gov/monitoring/>

Read the 2002 Annual Site Environmental Report or the 2002 Wastewater Land Application Site Performance Reports for the INEEL available in DOE Public Reading Rooms or at our Web site.

Contact:

Roger Wilhelmsen
208-526-9401
rmw@inel.gov

Idaho Nuclear Technology and Engineering Center (INTEC) Sewage Treatment Plant

- Influent to Sewage Treatment Plant (CPP-769):
 - Liquid Effluent Description: Untreated wastewater from sanitary sewer drains throughout INTEC
 - Type of Monitoring: Wastewater Land Application Permit and characterization
 - 2002 Results: Concentrations of all parameters within expected levels.
- Effluent from Cell No. 2 (CPP-771):
 - Liquid Effluent Description: Treated wastewater from aeration lagoons
 - Type of Monitoring: Characterization
 - 2002 Results: Concentrations of all parameters within expected levels.
- Sewage Treatment Plant effluent to Rapid Infiltration Trenches (CPP-773):
 - Liquid Effluent Description: Treated wastewater from the INTEC lagoons prior to the infiltration trenches
 - Type of Monitoring: Wastewater Land Application Permit and characterization
 - 2002 Results: Wastewater Land Application Permit total nitrogen level was exceeded for 3 months of Calendar Year 2002. Concentration of total suspended solids exceeded Wastewater Land Application Permit limit in December of 2002. Additional operational and plant modifications could be required if planned corrective actions do not reduce the nitrogen to acceptable concentrations.

Idaho Nuclear Technology and Engineering Center (INTEC) Percolation Ponds

- Effluent to Percolation Ponds (CPP-797):
 - Liquid Effluent Description: Process-related wastewater including noncontact cooling water and other nonhazardous liquids
 - Type of Monitoring: Wastewater Land Application Permit
 - 2002 Results: Concentrations of all parameters within expected levels. Decreasing trend for total dissolved solids, chloride, and sodium observed when considering all data since 1995.

Test Area North (TAN)

- Effluent to Sewage Treatment Plant Pond (TAN-655):
 - Liquid Effluent Description: Combination of process water from TAN-607 and treated sewage
 - Type of Monitoring: Wastewater Land Application Permit and surveillance
 - 2002 Results: Concentrations of applicable parameters below corresponding permit limits.

Test Reactor Area (TRA)

- Effluent to Cold Waste Pond (TRA-764):
 - Liquid Effluent Description: Nonradioactive, nonsanitary drains throughout TRA
 - Type of Monitoring: Surveillance
 - 2002 Results: Concentrations of sulfate and total dissolved solids exceeded corresponding limits. These higher concentrations are due to large volumes of secondary cooling water received by the Cold Waste Pond from the Advanced Test Reactor when it is in operation. During reactor operations, concentrations are two or three times that of concentrations during outages. Chemicals used in cooling tower water are primarily commercial corrosion inhibitors and sulfuric acid to control pH.